AMENDMENTS TO THE SPECIFICATION:

Please amend the indicated paragraphs of the specification in accordance with the amendments indicated below.

Page 1: 2nd full paragraph, bridging pages 1, 2 and 3, please amend as indicated below:

A coke oven battery for producing coke by coking coal particles essentially comprises regenerative chambers 51 having a brick checkerwork therein disposed in the lower part thereof and intervening combustion (heating) flues 52 and coking chambers 53 disposed over said regenerative chambers, as shown in a partially exploded-perspective cross-sectional view in Fig. 14. Reference numeral 54 designates a coal charging hole provided in the top of each coking chamber. Reference numeral 55 denotes coke oven doors that close off and open up the entry- and exit-side openings of each coking chamber 53. The coke oven battery heats the coal particles charged into the coking chambers 53 by the combustion gas and air preheated in the regenerative chambers 51 and then burnt in the combustion chambers 52 adjacent to the coking chambers. The waste gas generated in the combustion chamber 52 flows to offtake stacks after passing through exhaust ducts (not shown) provided on the coking chambers 53 and then through flues 56 while heating the brick checkerwork in the regenerative chambers. The coke oven doors

closing off and opening up the openings at the pusher and coke sides of the coking chambers are required to have a high enough heat resistance to withstand the high temperature (900°C or above) at which the coal particles charged into the coking chambers are dry distilled and a high enough sealing ability to prevent ~~the scattering of dusts from the coking coal particles,~~ the leaking of methane, carbon dioxide, hydrogen and carbon monoxide gases generated therein and the seeping of tar. Coke oven doors comprise approximately 400 mm thick heavy refractory blocks or bricks fitted in the pushing- and delivery-side openings of coking chambers and sealing members shaped like the cross-section of a knife edge pressed onto the ~~space between said refractory blocks or bricks and the wall of the coking chamber~~ door jamb, as disclosed in many Japanese patent gazettes such as Japanese Examined Patent Publication (Koukoku) No. 60-25072 and Japanese Unexamined Utility Model Publication (Kokai) NO. 5-56940. Recently, coke oven doors comprising refractory blocks or bricks adapted to plunge into the pushing- and delivery-side openings of coking chambers through seal plates were developed, as disclosed in Japanese Unexamined Patent Publication (Kokai) No. 2001-288472, and are finding increasing use because of their effect to greatly decrease gas leakage during coking.

Page 4: 1st full paragraph bridging pages 4 and 5, amend as indicated below:

Many patent gazettes disclose coke oven doors newly developed with the improvement of coke oven heat efficiency in mind. For example, Japanese Examined Patent Publication (Koukoku) No. 03-40074 (Japanese application filed in ~~1981~~ 1985) discloses a "method for coking the charge in the coke oven by sending the hot gas generated by said charge to the gas passage through the vertical flue provided in at least one of the doors in contact with said charge and separated from the interior of the coke oven by the thermally conductive metal wall constituting said door and moving part of said hot gas to an upper end region in contact with said partition wall therethrough by the ascending of said gas and the heat conductivity of the partition wall". A "coke oven door carrying on the inner side thereof a shield allowing passage of gases generated in the oven that comprises shielding members made up of spacers and coking plates" disclosed in Japanese Examined Patent Publication (Koukoku) No. 61-49353 (Japanese application filed in ~~1983~~ 1982) was developed based on the above-described method. Foreign patents similar to above mentioned Japanese patents are as follows. USP 4,381,972, USP 4,414,072, USP 4,467,342. Many other heat-up coke oven doors have been developed, such as a "coke oven door comprising a shield attached to the inner side of the oven wall via fittings to form a space for gas passage and made

up of multiple shield members having vertically partitioned U-shaped cross sections" disclosed in Japanese Unexamined Patent Publication (Kokai) No. 62-72782 (Japanese application filed in ~~1986~~ 1985), a "coke oven door comprising heat-resisting packings attached to both sides of the coke oven walls comprising metal shields provided on the inside of the oven door proper via spacers to form a space for gas passage" disclosed in Japanese Examined Utility Model Publication (Koukoku) No. 06-43146 (Japanese application filed in 1988), and a "coke oven door with ceramic coking plates" disclosed in Japanese Unexamined Utility Model Publication (Kokai) No. 02-69946 (Japanese application filed in 1988). Japanese Examined Patent Publication (Koukoku) No. 05-38795 (Japanese application filed in 1986) discloses a "coke oven door heated by raising the temperature of a gas space provided between a heat insulator attached to the oven door and a heating plate on the inner side of the oven by burning part of combustible gases generated by coking with the air and oxygen blown in from outside".

Page 6: 1st full paragraph bridging pages 6 and 7, amend as indicated below:

Though not certain, the inventor presumes that such coke oven doors have involved the following problems: Conventional space boxes comprise fabricated thin metal shield boxes. The ~~having small gas vents. Because the inflow of gases~~

~~generated in the oven is thus limited, the temperature in the space box does not rise high enough to raise the temperature of the coal particles near the coke oven door to the expected level. The sludgy tar generated during coking cycle flows into the narrow vents and clogs them by solidifying. Re-opening of the tar vents clogged by the tar must be done quickly in an environment that still retains high temperature after pushing. Besides the~~ space boxes have such structural problems as deforming under the influence of thermal stresses due to frequent heating and cooling repeated and cracking starting from metal sheet joints and propagating to other areas.

Page 14: 3rd full paragraph bridging pages 14 to 17, amend as indicated below:

Fig. 1 is a cross-sectional view showing an embodiment of this invention in the direction of oven height. Fig. 2 is a partially omitted, enlarged perspective view taken along the line A-A of Fig. 1. In Fig. 1, reference numeral 1 designates a coke oven, 2 coal particles charged in the coke oven 1, 3 an oven door structure that opens and closes an opening 4 in the coke oven 1. The oven door structure 3 comprises a sturdy cast iron frame 5 reinforced with flanges and is adapted to open and close the opening 4 in the coke oven 1 via a seal plate 7 that presses an door jamb 6 of the coke oven 1. Reference numeral 8 denotes a latch that comprises compression springs,

screw bolts and other fastening members and presses and fastens the oven door structure 3 to the opening 4 in the coke oven 1. While a flange member 9 having a knife-edge-shaped cross section is joined to the edge of the seal plate [[6]] 7, a spring loaded plunger 10, which comprises a cylinder and a spring and presses the flange member 9 to the frame 5, is provided on the oven door structure 3. That is, the oven door structure 3 of this invention is adapted to open and close the opening 4 in the coke oven 1 and press the edge of the seal plate [[6]] 7 to the frame [[5]] 6. Reference numeral 11 designates a heat-insulating box that comprises a heat-resistant metal box 12 filled with commonly used heat-insulating refractory materials such as alumina silicate, isolites, carbon woods and ceramics and is attached to the oven door structure 3 via the seal plate [[6]] 7 or via an inner plate 13 and the seal plate [[6]] 7 or a slide plate 14. The figure shows an embodiment in which the heat-insulating box 11 is attached with bolts (not shown) to the oven door structure 3 via the inner plate 13, seal plate [[6]] 7 and slide plate 14. Thus, the heat-insulating box 11 protects the seal plate [[6]] 7 from heat, prevents the release of heat from the oven door structure 3 and preserves the high-temperature heat possessed by the gas generated in the coke oven 1 and circulating on the oven door side thereof. Also, a bottom-less hollow plug 15 to circulate and isolate the gas having high-temperature heat generated in the coke oven 1 is provided on the coke oven side of the oven door structure 3 via the heat-insulating box 11. The bottom-less hollow plug 15 for gas migration and isolation comprises baggy, cylindrical or other appropriately shaped

horizontal support frames 16 made of heat-resisting steel or other heat-resisting metals that do not deform under the pressure of the coal particles 2 charged or other external pressures. The horizontal support frames 16 are fitted in the heat-insulating box 11 in such a manner as to partition the box into several spaces one on top of the other. As shown in Fig. 2, shield bars 17 to prevent the entry of coal particles made of the same material are attached to said horizontal support frames 16, with small ventilating spaces 18 left on both sides of each bar, either vertically and laterally flush with or vertically staggered from one another. The upper ends of said shield bars 17 are pivotally suspended to the horizontal support frames 16 with bolts or other fasteners 19 so as to be capable of returning to the original position when the bars tilt as a result of expansion or collision with other matters. Appropriate metals for the heat-resistant box 12 are not only common stainless steels but also cast irons having small thermal expansion coefficients and high heat-resisting strength that deform very little when subjected to repeated heating and cooling and maintain the original shape for a long time. Though the compositions of cast irons are not particularly limited, it is preferable that carbon content is between 3.0 and 3.8 weight percent in order to obtain hard cast irons comprising a mixture of pearlite matrix and graphite, silicon content is between 1.5 and 2.5 weight percent in order to decrease shrinkage and increase hardness and tensile strength, and manganese content is between 0.4 and 0.8 weight percent in order to increase hardness and tensile strength. It is also preferable to keep the content of phosphorus, which makes beautiful the

skin of cast iron, not more than 0.35 weight percent as phosphorus deteriorates tensile strength and the content of sulfur, which deteriorates castability and toughness, with the rest substantially comprising iron. When the bottom-less hollow plug 15 for allowing migration and isolation of gases generated in the oven is formed by placing the shield bars 17 to prevent the entry of coal particles, it is preferable to form a step on the edges of adjoining bars forming narrow gas flues in order to prevent the entry of coal particles 2 through the ventilating spaces 18 provided on both sides into the gas migration and isolation chamber, as shown in Fig. 3.